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Summary report on the technical analysis of the first biennial update report of Namibia submitted on 2 December 2014

In accordance with decision 2/CP.17, paragraph 41(a), Parties not included in Annex I to the Convention (non-Annex I Parties), consistent with their capabilities and the level of support provided for reporting, should submit their first biennial update report (BUR) by December 2014. The least developed country Parties and small island developing States may submit BURs at their discretion.

Further, in accordance with paragraph 58(a) of the same decision, the first round of international consultation and analysis (ICA) will be conducted for non-Annex I Parties, commencing within six months of the submission of their first BURs. The process of ICA includes two steps: the technical analysis of the submitted BURs, followed by a workshop on the facilitative sharing of views under the Subsidiary Body for Implementation.

This summary report presents the results of the technical analysis of the first BUR of Namibia undertaken by a team of technical experts in accordance with the modalities and procedures contained in the annex to decision 20/CP.19.

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I. Introduction and process overview

A. Introduction

1. In accordance with decision 2/CP.17, paragraph 41(a), Parties not included in Annex I to the Convention (non-Annex I Parties), consistent with their capabilities and the level of support provided for reporting, should submit their first biennial update report (BUR) by December 2014. The least developed country Parties and small island developing States may submit BURs at their discretion. Further, in accordance with paragraph 58(a) of the same decision, the first round of international consultation and analysis (ICA) will be conducted for non-Annex I Parties, commencing within six months of the submission of their first BURs. The process of ICA includes two steps: the technical analysis of the submitted BURs, resulting in a summary report for each BUR analysed, followed by a workshop on the facilitative sharing of views under the Subsidiary Body for Implementation.

2. This summary report presents the results of the technical analysis of the first BUR of Namibia undertaken by a team of technical experts (TTE) in accordance with the provisions on the composition, modalities and procedures of the TTE under ICA contained in the annex to decision 20/CP.19.

B. Process overview

3. Namibia submitted its first BUR on 2 December 2014.

4. The technical analysis of the BUR took place from 18 to 22 May 2015 in Bonn, Germany, and was undertaken by the following TTE, drawn from the UNFCCC roster of experts on the basis of the criteria defined in decision 20/CP.19, annex, paragraphs 2–6: Ms. Selam Kidane Abebe (Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention (CGE) member from Ethiopia), Mr. Sangay Dorji (Bhutan), Mr. Takeshi Enoki (CGE member from Japan), Ms. Baasansuren Jamsranjav (Mongolia), Mr. Christoph Streissler (Austria) and Mr. Jongikhaya Witi (South Africa). Mr. Enoki and Mr. Witi were the co-leads. Mr. Nalin Srivastava and Mr. Gopal Joshi from the secretariat provided administrative support to the TTE.

5. During the technical analysis, the TTE and Namibia had written exchange, through the secretariat, to provide technical clarifications on the information reported in the BUR, primarily to reach a common understanding on the identification of the capacity-building needs. Following the technical analysis of the BUR, the TTE prepared and shared a draft summary report with Namibia on 28 July 2015 for its review and comments. Namibia, in turn, provided its feedback on the draft summary report on 9 November 2015.

6. The TTE responded to and incorporated the comments referred to in paragraph 5 above from Namibia and finalized, in consultation with Namibia, the summary report on 8 February 2016.

II. Technical analysis of information reported in the biennial update report

A. Scope of the technical analysis

7. The scope of the technical analysis is outlined in decision 20/CP.19, annex, paragraph 15, according to which the technical analysis aims to, without engaging in a discussion on the appropriateness of these actions, increase transparency of mitigation actions and their effects, and shall entail the following:

(a) Identification of the extent to which the elements of information listed in the ICA guidelines contained in decision 2/CP.17, annex IV, paragraph 3(a), are included in the BUR of the Party concerned (see chapter II.B);

(b) A technical analysis of the information contained in the BUR, specified in the "UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention" (hereinafter referred to as the UNFCCC reporting guidelines on BURs) contained in annex III to decision 2/CP.17, and any additional technical information provided by the Party concerned (see chapter II.C);

(c) Identification of, in consultation with the Party concerned, capacity-building needs related to the facilitation of reporting in accordance with annex III to decision 2/CP.17 and to the participation in ICA in accordance with annex IV to decision 2/CP.17. taking into account Article 4, paragraph 3, of the Convention (see chapter II.D).

8. The remainder of this chapter presents the results of each of the three parts of the technical analysis of Namibia's BUR outlined in paragraph 7 above.

B. Overview of the elements of information reported

9. The elements of information referred to in paragraph 7(a) above include: the national greenhouse gas (GHG) inventory report; mitigation actions, including a description of such actions, an analysis of their impacts and the associated methodologies and assumptions, and the progress made in their implementation; information on domestic measurement, reporting and verification (MRV); and support received.

10. Further, in accordance with decision 20/CP.19, annex, paragraph 15(a), in undertaking the technical analysis of the submitted BUR, the TTE shall identify the extent to which the elements of information listed in the guidelines contained in decision 2/CP.17, annex IV, paragraph 3(a), are included in the BUR of the Party concerned. The results of this analysis are presented in tables 1, 2 and 3 below.

1. National greenhouse gas inventory

11. The parts of the UNFCCC reporting guidelines on BURs on reporting information on GHG emissions by sources and removals by sinks in BURs are contained in decision 2/CP.17, paragraph 41(g), and annex III, paragraphs 3–10, of the same decision. Further, as per decision 2/CP.17, annex III, paragraph 3, non-Annex I Parties should submit updates of national GHG inventories according to paragraphs 8–24 of the "Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention" as contained in the annex to decision 17/CP.8. The scope of the updates on national GHG inventories should be consistent with capacities, time constraints, data availabilities and the level of support provided by developed country Parties for biennial update reporting.

12. Table 1 below presents results of the identification of the extent to which the elements of information on GHGs are included in the first BUR of Namibia in accordance with the relevant parts of the UNFCCC reporting guidelines on BURs.

Table 1

Identification of the extent to which the elements of information on greenhouse gases are included in the first biennial update report of Namibia

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
Decision 2/CP.17, paragraph 41(g)	The first BUR shall cover, at a minimum, the inventory for the calendar year no more than four years prior to the date of the submission, or more recent years if information is available	Yes	
Decision 2/CP.17, annex III, paragraph 5	The updates of the sections on the national inventories of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol should contain updated data on activity levels based on the best information available using the Revised 1996 IPCC Guidelines for National GHG Inventories, the IPCC good practice guidance and Uncertainty Management in National GHG Inventories and the IPCC good practice guidance for LULUCF; any change to the emission factor may be made in the subsequent full national communication	Partly	Namibia used the inventory methodologies contained in the 2006 IPCC Guidelines. However, Namibia did not provide updated activity data for all categories
Decision 2/CP.17, annex III, paragraph 9	The inventory section of the BUR should consist of a national inventory report as a summary or as an update of the information contained in decision 17/CP.8, annex, chapter III (National greenhouse gas inventories), including:	Partly	While Namibia's first BUR contains updates of inventory information, it does not contain emission estimates of F-gases
	• Table 1 (National greenhouse gas inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol and greenhouse gas precursors)	Yes	
	• Table 2 (National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and SF_6)	No	In its first BUR, Namibia did not report emission estimates of F-gases
Decision 2/CP.17, annex III, paragraph 6	Non-Annex I Parties are encouraged to include, as appropriate and to the extent that capacities permit, in the inventory section of the BUR:		
	• Tables included in annex 3A.2 to chapter 3 of the IPCC good practice guidance for LULUCF	Partly	In its first BUR, Namibia did not provide the tables included in annex 3A.2 to chapter 3 of the IPCC good practice guidance for LULUCF, but reported comparable information according to the 2006 IPCC Guidelines
	• The sectoral report tables annexed to the Revised 1996 IPCC Guidelines	Partly	In its first BUR, Namibia did not provide sectoral report tables annexed to the Revised

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
			1996 IPCC Guidelines, but reported comparable information according to the 2006 IPCC Guidelines
Decision 2/CP.17, annex III, paragraph 7	Each non-Annex I Party is encouraged to provide a consistent time series back to the years reported in the previous national communications	Partly	In its first BUR, Namibia only provided emission estimates for the years 1994, 2000 and 2010
Decision 2/CP.17, annex III, paragraph 8	Non-Annex I Parties that have previously reported on their national GHG inventories contained in their national communications are encouraged to submit summary information tables of inventories for previous submission years (e.g. for 1994 and 2000)	Yes	In its first BUR, Namibia provided summary tables of GHG inventories from previous submissions
Decision 2/CP.17, annex III, paragraph 10	Additional or supporting information, including sector-specific information, may be supplied in a technical annex	Yes	
Decision 17/CP.8, annex, paragraph 13	Non-Annex I Parties are encouraged to describe procedures and arrangements undertaken to collect and archive data for the preparation of national GHG inventories, as well as efforts to make this a continuous process, including information on the role of the institutions involved	Yes	
Decision 17/CP.8, annex, paragraph 14	Each non-Annex I Party shall, as appropriate and to the extent possible, provide in its national inventory, on a gas-by-gas basis and in units of mass, estimates of anthropogenic emissions of the following gases, by sources and removals by sinks:		
	• CO_2	Yes	
	• CH_4	Yes	
	• N_2O	Yes	
Decision 17/CP.8, annex, paragraph 15	Non-Annex I Parties are encouraged, as appropriate, to provide information on anthropogenic emissions by sources of HFCs, PFCs and SF_6	No	In its first BUR, Namibia did not provide information on anthropogenic emissions by sources of HFCs, PFCs and SF_6
Decision 17/CP.8, annex, paragraph 19	Non-Annex I Parties should, to the extent possible, and if disaggregated data are available, report emissions from international aviation and marine bunker fuels separately in their inventories:		
	• International aviation	Yes	
	• Marine bunker fuels	Yes	
Decision 17/CP.8, annex, paragraph 16	Non-Annex I Parties are encouraged, as appropriate, to report on anthropogenic emissions by sources of other GHGs such as:		
	• CO	Yes	
	• NOx	Yes	
	• NMVOCs	Yes	
Decision	Other gases not controlled by the Montreal Protocol,	Yes	

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
17/CP.8, annex, paragraph 17	such as SO_x, included in the Revised 1996 IPCC Guidelines, may be included at the discretion of the Parties		
Decision 17/CP.8, annex, paragraph 21	Non-Annex I Parties are encouraged to provide information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol, including a brief explanation of the sources of emission factors and activity data. If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines, they should explicitly describe the source and/or sink categories, methodologies, emission factors and activity data used in their estimation of emissions, as appropriate. Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building:		
	• Information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol	Yes	
	• Explanation of the sources of emission factors	Yes	
	• Explanation of the sources of activity data	Yes	
	• If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines, they should explicitly describe:	No	In its first BUR, Namibia did not report emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines
	o Source and/or sink categories		
	o Methodologies		
	o Emission factors		
	o Activity data		
	• Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building	Yes	
Decision 17/CP.8, annex, paragraph 24	Non-Annex I Parties are encouraged to provide information on the level of uncertainty associated with inventory data and their underlying assumptions, and to describe the methodologies used, if any, for estimating these uncertainties:	Yes	
	• Level of uncertainty associated with inventory data	Yes	
	• Underlying assumptions	No	In its first BUR, Namibia did not provide details on assumptions used for uncertainty analysis

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
	• Methodologies used, if any, for estimating these uncertainties	Yes	

Abbreviations: BUR = biennial update report, F-gas = fluorinated gas, GHG = greenhouse gas, IPCC = Intergovernmental Panel on Climate Change, IPCC good practice guidance = *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*, IPCC good practice guidance for LULUCF = *Good Practice Guidance for Land Use, Land-Use Change and Forestry*, NMVOC = non-methane volatile organic compound, Revised 1996 IPCC Guidelines = *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*, 2006 IPCC Guidelines = *2006 IPCC Guidelines for National Greenhouse Gas Inventories*.

2. Mitigation actions and their effects

13. The parts of the UNFCCC reporting guidelines on BURs on reporting information on mitigation actions in the BUR are contained in decision 2/CP.17, annex III, paragraphs 11–13.

14. Namibia did report mitigation actions in its first BUR. The mitigation actions reported are provided in tabular format.

15. Table 2 below presents results of the identification of the extent to which the elements of information on mitigation actions are included in the first BUR of Namibia in accordance with the relevant parts of the UNFCCC reporting guidelines on BURs.

Table 2
Identification of the extent to which the elements of information on mitigation actions are included in the first biennial update report of Namibia

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
Decision 2/CP.17, annex III, paragraph 12	For each mitigation action or groups of mitigation actions including, as appropriate, those listed in document FCCC/AWGLCA/2011/INF.1, developing country Parties shall provide the following information to the extent possible:		
(a)	Name and description of the mitigation action, including information on the nature of the action, coverage (i.e. sectors and gases), quantitative goals and progress indicators	Partly	In its first BUR, Namibia provided names of the mitigation actions and information on their coverage, for all mitigation actions. In some instances, however, Namibia did not provide information on their quantitative goals and provided only qualitative information on their progress indicators
(b)	Information on methodologies and assumptions:		
	• Methodologies	Yes	
	• Assumptions	Yes	
(c)	Objectives of the action and steps taken or envisaged to achieve that action:		
	• Objectives of the action	Yes	
	• Steps taken or envisaged to achieve that action	Yes	
(d)	Information on the progress of implementation of the		

Decision	*Provision of the reporting guidelines*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
	mitigation actions and the underlying steps taken or envisaged, and the results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible:		
	• Progress of implementation of the mitigation actions	Yes	
	• Underlying steps taken or envisaged	Yes	
	• Results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible	Yes	
(e)	Information on international market mechanisms	Yes	
Decision 2/CP.17, annex III, paragraph 13	Parties should provide information on the description of domestic measurement, reporting and verification arrangements	Yes	

Abbreviation: BUR = biennial update report.

3. Finance, technology and capacity-building needs and support received

16. The parts of the UNFCCC reporting guidelines on BURs on reporting information on finance, technology and capacity-building needs and support received in the BUR are contained in decision 2/CP.17, annex III, paragraphs 14–16.

17. Table 3 below presents results of the identification of the extent to which the elements of information on finance, technology and capacity-building needs and support received are included in the BUR of Namibia in accordance with the relevant parts of the UNFCCC reporting guidelines on BURs.

Table 3
Identification of the extent to which the elements of information on finance, technology and capacity-building needs and support received are included in the first biennial update report of Namibia

Decision	*Reporting requirements*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
Decision 2/CP.17, annex III, paragraph 14	Non-Annex I Parties should provide updated information on constraints and gaps, and related financial, technical and capacity-building needs:		
	• Constraints and gaps	Yes	
	• Related financial, technical and capacity-building needs	Yes	
Decision 2/CP.17, annex III, paragraph 15	Non-Annex I Parties should also provide updated information on financial resources, technology transfer, capacity-building and technical support received from the GEF, Annex II Parties and other developed country Parties, the GCF and multilateral institutions for activities relating to climate change, including for the preparation of the current BUR	Yes	
Decision 2/CP.17, annex III, paragraph 16	With regard to the development and transfer of technology, non-Annex I Parties should provide information on technology needs, which must be nationally determined, and technology support		

Decision	*Reporting requirements*	*Yes/ Partly/No*	*Comments on the extent of the information provided*
	received:		
	• Technology needs, which must be nationally determined	Yes	In its first BUR, Namibia has reported on technology needs. The BUR mentions that a full extensive technology needs assessment is yet to be carried out, but does not provide clarity on the process of determining the technology needs
	• Technology support received	Yes	

Abbreviations: BUR = biennial update report, GCF = Green Climate Fund, GEF = Global Environment Facility.

C. Technical analysis of the information reported

18. The technical analysis referred to in paragraph 7(b) above aims to, without engaging in discussion on the appropriateness of these actions, increase transparency of mitigation actions and their effects. Accordingly, the technical analysis focused on the transparency of information reported in BURs.

19. In addition to covering the information in the BUR and any additional technical information provided by the Party concerned, the technical analysis also focused, in relation to information reported on national GHG inventories, on the consistency of the methods used for developing those inventories with the appropriate methods developed by the Intergovernmental Panel on Climate Change (IPCC) and referred to in the UNFCCC reporting guidelines on BURs. The results of the technical analysis are presented in the remainder of the chapter.

1. Information on national circumstances and institutional arrangements relevant to the preparation of national communications on a continuous basis

20. As per the scope defined in decision 2/CP.17, annex III, paragraph 2, the BURs should provide an update to information contained in the most recently submitted national communication, including, among other things, information on national circumstances and institutional arrangements relevant to the preparation of national communications on a continuous basis. For national communications, non-Annex I Parties report national circumstances following reporting guidance contained in decision 17/CP.8, annex, paragraphs 3–5.

21. In accordance with decision 17/CP.8, annex, paragraph 3, Namibia, in its BUR, reported the following information on national circumstances: description of national and regional development priorities, objectives and circumstances, including information on features of geography, climate, economy and health, which may affect the ability to deal with mitigating and adapting to climate change, as well as information regarding specific needs and concerns arising from the adverse effects of climate change and/or the impact of the implementation of response measures, as contained in Article 4, paragraph 8, and, as appropriate, in Article 4, paragraphs 9 and 10, of the Convention.

22. As encouraged in decision 17/CP.8, annex, paragraph 4, Namibia provided a summary of relevant information regarding its national circumstances. This information

transparently describes national circumstances, in particular, the geography, climate, population, education and economy of Namibia.

23. Namibia's development is guided by its long-term vision called Vision 2030. The main objective of Vision 2030 is to achieve a prosperous and industrialized Namibia with its own human resources, enjoying peace, harmony and political stability. Namibia is a country situated in south-western Africa between latitudes 17° and 29° S and longitudes 11° and 26° E, and covers a land area of 825,418 km^2. It is one of the biggest and driest countries in sub-Saharan Africa, and is characterized by high climatic variability in the form of persistent droughts, unpredictable and variable rainfall patterns, variability in temperatures and scarcity of water. It also has a remarkable variety of species, habitats and ecosystems ranging from deserts to subtropical wetlands and savannahs. Agriculture plays a key role in the socioeconomic base of the country's population of just over two million inhabitants. It is estimated that 48 per cent of Namibia's rural households depend on subsistence agriculture. Mining is the backbone of Namibia's national economy and contributed 11.5 per cent to the country's gross domestic product in 2012. In terms of electricity generation, Namibia has a total electricity generation capacity of 400 MW with hydropower, coal and diesel constituting 60, 30 and 10 per cent, respectively, of the generation capacity. Current national electricity demand is 550 MW. The difference in supply and demand is met through imports from neighbouring countries within the Southern Africa Development Community. Namibia is currently experiencing economic growth.

24. Namibia provided information on national circumstances and institutional arrangements to meet its reporting obligations to the UNFCCC. The Ministry of Environment and Tourism, through the Directorate of Environment Affairs, is the focal point to the UNFCCC, and coordinates and implements climate change related activities. Namibia also has a National Climate Change Committee comprising representatives of the various ministries and other stakeholders including the private sector and non-governmental organizations to oversee the implementation of climate change activities including preparation and adoption of reports to the UNFCCC. The Cabinet of Namibia is the government entity with overall responsibility for development of climate change policies.

25. Namibia, in its BUR, described institutional arrangements relevant to the preparation of national communications and BURs on a continuous basis. The description covers key aspects of the institutional arrangements such as legal status and roles and responsibilities of the overall coordinating entities, involvement and roles of other sectoral institutions and experts, other forms of stakeholder engagements and future improvement plans. However, the TTE notes that information on the mechanism for data exchange, quality control and control procedures needs additional elaboration.

26. The information reported in the first BUR and additional information provided during the technical analysis week transparently describes the institutional arrangements of Namibia and also demonstrates that the arrangements are able to meet the requirements of the preparation of national communications and BURs on a continuous basis.

2. National greenhouse gas emissions by sources and removals by sinks

27. Namibia reported, in its BUR, information on national GHG inventories for 2010. Namibia also reported national GHG inventories for 1994 and 2000.

28. Namibia's first BUR states that the current national GHG inventory has been compiled using the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the 2006 IPCC Guidelines). The European Monitoring and Evaluation Programme (EMEP) / European Environment Agency air pollution emission inventory guidebook was used for compiling estimates for nitrogen oxides (NO_x), carbon

monoxide (CO), non-methane organic volatile compounds (NMVOCs) and sulphur oxides (SO_x).

29. Namibia reported estimates of emissions by sources and removals by sinks of carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) for the year 2010. In addition, it provided estimates of emissions and removals of these gases by sectors for the years 1994 and 2000. The TTE notes that owing to the inconsistency in the level of disaggregation in GHG emissions and removals between the three years, it is not possible to understand the trends in individual source and sink categories across the years reported in the first BUR. Namibia also reported emission estimates of indirect GHG emissions (CO, NMVOCs and NO_x) and SO_x (sulphur dioxide). During the consultation process on capacity-building needs, Namibia indicated that capacity-building needs on understanding EMEP/core inventory of air emissions (CORINAIR) methods will greatly enhance its ability to quantify emissions of indirect GHG emissions.

30. In 2010, net anthropogenic removals of GHGs were estimated as −16,483.49 Gg carbon dioxide equivalent (CO_2 eq) with CO_2, CH_4 and N_2O emissions/removals of −22,895.53 Gg CO_2 eq, 4,302.08 Gg CO_2 eq and 2,109.86 Gg CO_2 eq, respectively. In terms of sectors, the agriculture, forestry and other land use sector was a net sink of −27,680.47 Gg CO_2 eq, while the energy sector accounted for emissions of 2,561.49 Gg CO_2 eq, the industrial processes and product use (IPPU) sector accounted for emissions of 0.07 Gg CO_2 eq and the waste sector accounted for emissions of 22.47 Gg CO_2 eq. Drivers associated with observed GHG emission trends were explained in the first BUR.

31. The TTE notes that Namibia did not report on provision of information on anthropogenic emissions by sources of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6), and also did not provide additional information in the first BUR clarifying the occurrence of emissions of these GHGs in the country. The TTE considers that it would be more transparent if Namibia would report information on emissions of fluorinated gases (F-gases) using table 2 (National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and SF_6), as provided in the annex to decision 17/CP.8.

32. In its first BUR, Namibia provided a detailed description of methodologies and emission factors used for different inventory categories. The TTE notes that while information on emission factors in different sectors is comprehensive, the first BUR does not provide information on activity data, including on how they are collected or derived. Examples include: development of land-use maps for estimation of emissions and removals of GHGs for the land use, land-use change and forestry (LULUCF) sector, as well as use of other data sets to verify or ground truth the maps; urea application in agricultural soils; and source and use of energy balances to perform comparison of CO_2 emissions between the reference and sectoral approaches in the energy sector. In its first BUR, Namibia also highlighted lack of activity data in some source categories, particularly in the IPPU sector. The TTE considers that some of these challenges could be addressed through a capacity-building programme for collection of activity data for these categories. Sustainable and timely production of land-use maps might require much more organized capacity-building support. Namibia identified insufficient data and a severe lack of financial and technological resources as major constraints to improving emission factors and other parameters in the agriculture and LULUCF sectors.

33. The TTE notes that the reported inventory estimates for 1994 and 2000 are the same as those reported in Namibia's second national communication, which states that inventory estimates for 1994 and 2000 were prepared using the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*. However, the inventory for 2010 was prepared using the 2006 IPCC Guidelines, thus leading to time-series consistency issues across the inventory years reported in the first BUR. Hence, the TTE notes that ensuring time-series

consistency of inventory estimates across the years reported in Namibia's first BUR is an area of potential capacity-building for Namibia. The TTE further notes that there is also a capacity-building opportunity in helping Namibia build a complete inventory time series covering the period between 1994 and 2010.

34. In response to an observation by the TTE, Namibia provided the explanation that apart from the inventory for 2010, it has reported inventories for 1994 and 2000 from the previous national communications. Namibia further informed the TTE that a consistent time series will be included in the national inventory report in the third national communication. While acknowledging Namibia's response and commending its intention, the TTE notes that Namibia has only partly provided the information as encouraged by decision 2/CP.17, that is, a consistent inventory time series between 2010 and the years reported in the previous national communication.

35. Namibia's first BUR states that Namibia has used Agriculture and Land Use (ALU) software,[1] along with the IPCC Inventory Software,[2] for some source categories in the agriculture sector. However, the TTE notes that the ALU software is based on the *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*, whereas the IPCC Inventory Software is consistent with the 2006 IPCC Guidelines. In response to a TTE observation regarding provision of transparent information on how the two software tools have been used together to derive the inventory estimates, Namibia clarified that this information has been provided clearly under the Emission Factors section of the BUR. While acknowledging Namibia's explanation, the TTE notes that this information relates to emission factors, whereas the TTE observation pertains to information on how a combination of the ALU software and the IPCC Inventory Software has been used together to produce the inventory in view of the fact that they are based on two different sets of IPCC inventory guidelines. The TTE therefore notes that transparency of information could be enhanced if Namibia provided some information on how the IPCC Inventory Software was used in combination with the ALU software.

36. The TTE further notes that in its first BUR, Namibia provided information on quality assurance/quality control procedures employed for each inventory sector and archiving of inventory data and information, as well as information on institutional arrangements put in place to compile its national GHG inventory. The TTE commends Namibia for the transparent information provided on these elements.

37. In its first BUR, Namibia reported a key category analysis (KCA) using approach 1 level assessment, which includes LULUCF for the year 2010. The results of the KCA show that forest land remaining forest land (CO_2), land conversions to grassland and forest land (CO_2), enteric fermentation (CH_4) and road transportation (CO_2) are the only key categories in Namibia's GHG inventory. The TTE commends Namibia for undertaking the KCA and reporting its results.

38. In its first BUR, Namibia reported the overall uncertainty estimates of the inventory for 2010 as 7.1 per cent, and 72.5 per cent with inclusion of LULUCF. The TTE commends Namibia for reporting the overall uncertainty of its national GHG inventory with and without LULUCF in its first BUR. The TTE notes that assumptions and methodologies used to collect uncertainty data were not described in the BUR, including explanations for the observed uncertainty results. The TTE considers that this information would enhance the transparency of information on uncertainty assessment. The TTE further notes that this is another area that Namibia could consider for capacity-building.

[1] Available at <http://www.nrel.colostate.edu/projects/ALUsoftware/>.
[2] Available at <http://www.ipcc-nggip.iges.or.jp/software/>.

3. Mitigation actions and their effects, including associated methodologies and assumptions

39. As indicated in table 2 above, Namibia reported, in its BUR, information on mitigation actions and their effects.

40. Namibia's first BUR provides information on 26 mitigation actions in tabular format. These actions represent a potential annual reduction of 52 Gg CO_2 emissions that can be achieved in the short time. The TTE identifies four broad types of mitigation actions:

(a) Mitigation actions in the form of general policies regarding energy efficiency and renewable energy (e.g. overarching plans and programmes and supportive actions such as feed-in tariffs);

(b) Mitigation actions relating to specific programmes promoting energy efficiency and renewable energies (e.g. actions that give incentives to install climate-friendly appliances by providing subsidies, awareness campaigns or similar instruments);

(c) Mitigation actions consisting of individual renewable energy projects (e.g. actions relating to individual projects, mainly solar, wind and hydroelectric power plants or installations);

(d) Mitigation actions that have been submitted for approval as clean development mechanism (CDM) projects.

41. In addition to the overarching measures, the National Policy on Climate Change and the Namibian Climate Change Strategy and Action Plan, in its first BUR, Namibia also reported on some other mitigation actions that take the form of general policies and plans, namely, Namibia's Renewable Energy Programme, which aims to establish feed-in tariffs; an assessment of the financial requirements to promote renewable energy; a master plan for off-grid energy supply; and a plan to promote energy audits in enterprises. With regard to these mitigation actions, the TTE notes that information on the mitigation actions can be inferred from the information provided, even if they were not reported under the same headings.

42. In its first BUR, Namibia reported on several actions that take the form of programmes promoting energy efficiency and renewable energies such as an awareness campaign to replace incandescent lamps by compact fluorescent lamps, a programme to replace electric water heaters by solar powered ones and a programme to install solar powered cookers instead of cookers using fuelwood. The mitigation actions relating to these programmes primarily involve sensitization campaigns and providing incentives. The objectives of these programmes are to achieve emission reductions by reducing energy consumption (fossil fuels, electricity or fuel wood) while promoting development goals.

43. Namibia's first BUR also provides information on 10 mitigation actions that relate to individual renewable energy projects, mostly involving electricity generation using renewable sources such as solar, hydroelectric, wind and biomass energies.

44. The TTE notes that Namibia could enhance the transparency of the information in the BUR by providing more transparent descriptions of the mitigation actions as well as information as on the steps taken and envisaged to implement the mitigation actions and on the progress of their implementation. For instance, a short description of the plans, such as the Renewable Energy Programme or the master plan for off-grid energy supply, would be helpful in better understanding the scope and objectives of these plans. With respect to the mitigation actions relating to renewable energy projects, there was insufficient information on parameters such as generation capacities of the individual projects or similar parameters in the description of the projects, as well as on progress in their implementation, including

specific information on the status of their implementation. In response to technical clarification sought by the TTE, Namibia provided information on the state of implementation of all mitigation actions listed in table 3.1 of the BUR, classifying them as 'completed', 'ongoing' or 'planned'. Namibia also provided supplementary information on the generation capacities of all individual projects. The TTE commends Namibia for providing this information.

45. In its first BUR, Namibia provided information on mitigation goals in terms of estimated emission reductions for most of the programmes. However, the TTE notes that in some instances, Namibia provided information on the parameters to be used for assessing progress of the programmes, without providing information on quantitative mitigation goals in terms of these parameters. For instance, while the first BUR mentions the number of solar powered cookers installed as the parameter used to assess progress of that programme, there was no information on the specific number of solar powered cookers planned to be deployed through this programme by a specific date. The TTE further notes that in most cases, other than a reference to the use of the 2006 IPCC Guidelines, the first BUR did not provide specific information on the assumptions and methodologies used to analyse the impacts of the mitigation actions. The TTE notes that transparent information on methodologies and assumptions used to estimate the impact of mitigation actions would greatly enhance the transparency of the information reported and considers this to be an area of capacity-building for Namibia.

46. In its first BUR, Namibia lists three waste sector CDM projects as mitigation actions. Two of them have been approved as CDM projects, while the third one is submitted for approval. The TTE notes that the information on the methodologies provided for the projects was not consistent with the CDM methodologies associated with these projects. The first BUR provided estimated emission reduction for only one of the approved CDM projects. At the time of reporting, the projects had not yet been implemented as they are awaiting financing through international mechanisms.

4. Constraints and gaps, and related financial, technical and capacity-building needs, including a description of support needed and received

47. In accordance with decision 2/CP.17, annex III, paragraphs 14–16, Namibia has reported on constraints and gaps and related financial, technical and capacity-building needs, including a description of support received both in reporting to the Convention and in implementing climate change activities in its first BUR. The TTE commends Namibia for providing this information.

48. According to Namibia's first BUR, apart from technical and capacity-building needs, Namibia requires substantial funding in order to implement the Convention and meet its reporting obligations under the Convention. In the first BUR, Namibia provided an estimated need for financial support of approximately USD 32,100,000 over the next 10 years, mainly for developing and implementing mitigation projects. The first BUR also mentions that Namibia will submit additional financial needs in subsequent submissions of national communications or BURs. The first BUR also provides information on Namibia's technical support and capacity-building needs. These are primarily for the preparation of BURs and implementation of mitigation actions. The TTE commends the efforts made by Namibia in compiling this comprehensive information.

49. In its first BUR, Namibia reported updated information on financial resources and technical support received for the preparation of the BUR as well as for other climate change activities. Namibia reported on technical and capacity-building support received from organizations such as the UNFCCC. However, the TTE notes that apart from the USD 352,000 received from the Global Environment Facility (GEF) for the preparation and submission of the first BUR and the USD 900,000 for the Combating Bush Encroachment

for Namibia's Development project's biomass electricity generation plant, Namibia did not provide information on support received from any other multilateral or bilateral sources. During the technical analysis, Namibia informed the TTE that financial support received from the GEF and capacity-building support received from the UNFCCC or other institutions for the preparation of national communications, compilation of GHG inventories, performing mitigation assessment, vulnerability and adaptation assessments and technology needs assessment, among others, were not included. Namibia further clarified that due to a lack of a centralized database for all support received in relation to climate change activities since it became a Party to the Convention, compilation of this information is very difficult. The TTE considers that Namibia could make further improvements in tracking financial, technical and capacity-building support received with additional capacity-building measures.

50. In its first BUR, Namibia provided information on technology needs. The first BUR presents a list of hard and soft technology needs for Namibia (table 5.3). The first BUR states that Namibia has yet to complete an extensive study of its technology needs and transfers, and that this exercise is being carried out in a piecemeal manner only, within the framework of preparation of national communications, due to lack of capacity and funds. Namibia estimates a need for financial support of USD 300,000 in order to carry out an in-depth technology needs assessment, and informed the TTE during the technical analysis that without financial support, the technology needs assessment will continue to be done in a piecemeal manner for the preparation of national communication and BUR submissions only. The TTE commends Namibia for identifying the need to carry out an extensive technology needs assessment and providing an estimate of the support needed.

5. Domestic measurement, reporting and verification

51. In accordance with decision 2/CP.17, annex III, paragraph 13, in its first BUR, Namibia reported on domestic MRV arrangements. Namibia has its own monitoring and evaluation (M&E) process in place that involves assessing progress on various goals and strategies implemented under the Fourth National Development Plan. This includes regular reporting related to climate change policy by the Ministry of Environment and Tourism, the entity responsible for this area, and its subunits, the Department of Environmental Affairs and the Climate Change Unit.

52. Namibia has not yet developed any nationally appropriate mitigation actions (NAMAs), and hence it has not felt the necessity to formally develop an MRV system for NAMAs or mitigation actions in general. Namibia intends to do so in the future, including by putting in place arrangements for inventory preparation.

53. In its first BUR, Namibia reported that external consultants produced the national communications until the second national communication. However, due to the new enhanced reporting requirements in terms of frequency of national communications and the introduction of BURs, Namibia has decided to set up a system to produce the national communications in-house in the future, which will be supported by consultants. Furthermore, the MRV system for the GHG inventory and mitigation actions including domestically supported NAMAs will be developed with collaboration of the institutions within the framework of national institutional arrangements and the wider national M&E system. The TTE commends Namibia for this decision, because it is expected to improve its reporting under the Convention, and considers that Namibia could benefit from capacity-building to fully operationalize a national system to produce national communications and BURs in a sustainable manner.

D. Identification of capacity-building needs

54. The TTE noted the requirement of technical assistance and capacity-building for the preparation and submission of BURs as identified by Namibia in its first BUR. In consultation with Namibia, the TTE identified the following capacity-building needs related to the facilitation of the preparation of the subsequent BURs and participation in ICA:

(a) The TTE notes the capacity-building needs related to the national GHG inventory of Namibia as highlighted in section 2.11 of the first BUR. The TTE identified the following areas for possible capacity-building: enhancement of Namibia's ability to quantify emissions of indirect GHG emissions by better understanding of EMEP/CORINAIR methods (para. 29 above); estimation of F-gas emissions (para. 31 above); collection of activity data for some categories such as in the IPPU sector and development and ground-truthing of land-use maps for the LULUCF sector (para. 32 above); ensuring time-series consistency of inventory estimates across the reported years (para. 33 above); and provision of transparent information on uncertainty estimation including underlying methodologies and assumptions (para. 37 above);

(b) With regard to reporting on mitigation actions, the TTE notes that, in line with the objectives of the UNFCCC reporting guidelines on BURs, Namibia would benefit from capacity-building aiming at a more transparent presentation of information on mitigation actions with regard to: their description; a quantitative description of goals and progress indicators; and a description of methodologies and assumptions used (paras. 43 and 44 above);

(c) The TTE considers that Namibia could benefit from capacity-building in the area of consolidating and compiling information on support received from Annex II Parties, the GEF and other multilateral agencies and other developed countries that could be helpful in developing a system for tracking all climate change related support received (para. 48 above);

(d) In the context of Namibia deciding to shift to production of national communication and BUR submissions in-house as opposed to the previous method of using consultants, the TTE considers that Namibia could benefit from capacity-building to fully operationalize a national system to produce national communications and BURs in a sustainable manner (para. 52 above);

(e) The TTE notes Namibia's need for financial resources for carrying out its nationally determined technology needs assessment as mentioned in its first BUR, and considers that capacity-building in this area would further enable Namibia to carry out the extensive technology needs assessment.

III. Conclusions

55. The TTE concludes that:

(a) Most of the elements of information listed in paragraph 3(a) of the ICA guidelines are included in the first BUR of Namibia;

(b) In summary, the TTE commends Namibia for the comprehensive BUR and highlights the following from its analysis:

(i) In accordance with decision 2/CP.17, annex III, paragraphs 3–10, Namibia has reported information on its GHG inventory in its first BUR. Namibia used the 2006 IPCC Guidelines to estimate the GHG emissions and removals for its current

GHG inventory for the year 2010 (see paras. 27–38 above). In 2010, Namibia's net anthropogenic GHG removals were estimated to be −16,483.49 Gg CO_2 eq. Namibia provided a detailed description of methodologies and emission factors used for the inventory estimates;

(ii) In accordance with decision 2/CP.17, annex III, paragraphs 11–12 Namibia reported information on its mitigation actions in the first BUR. Namibia has also provided information on their coverage, quantitative goals, progress indicators and methodologies, and assumptions used in estimating them (see paras. 39–46 above). According to the technical analysis, the mitigations actions fall under four broad categories, namely: (a) policy frameworks and plans regarding energy efficiency and renewable energies; (b) general programmes promoting energy efficiency and renewable energies through the provision of incentives and subsidies; (c) actions relating to individual renewable energy projects; and (d) actions that have been submitted to be approved as CDM projects;

(iii) In accordance with decision 2/CP.17, annex III, paragraphs 14–16, Namibia reported on constraints and gaps and related financial, technical and capacity-building needs and support received in its first BUR (see paras. 47–50 above). Apart from technical and capacity-building support, in its first BUR, Namibia reported an estimated need for financial support of approximately USD 32,100,000 over the next 10 years, mainly for developing and implementing mitigation projects. Namibia received technical and capacity-building support from organizations such as the UNFCCC. In addition to government funding, Namibia also received financial support from the GEF and the Combating Bush Encroachment for Namibia's Development project amounting to USD 442,000. Namibia has presented information on its technology needs that are assessed only in the framework of the NC and BUR preparation process.

56. The TTE, in consultation with Namibia, identified a number of capacity-building needs related to the facilitation of reporting in accordance with annex III to decision 2/CP.17 and to the participation in ICA in accordance with annex IV to decision 2/CP.17, taking into account Article 4, paragraph 3, of the Convention. The key capacity building needs prioritized by Namibia are summarized below:

(a) Capacity-building support for compilation of the GHG inventory including for: estimation of indirect GHG emissions; collection of activity data for some categories; development and verification of land-use maps; ensuring inventory time-series consistency; and provision of transparent information on methodologies and assumptions used for uncertainty assessment;

(b) Capacity-building aiming at a more transparent presentation of information on mitigation actions with regard to: their description; a quantitative description of goals and progress indicators; and a description of methodologies and assumptions used;

(c) Capacity-building in the area of consolidating and compiling information on support received from Annex II Parties, the GEF and other multilateral agencies, and other developed countries;

(d) Capacity-building to fully operationalize a national system to produce national communications and BURs in a sustainable manner;

(e) Capacity-building to enable Namibia to carry out extensive technology needs assessment.

Annex

Documents and information used during the technical analysis

Reference documents

"Composition, modalities and procedures of the team of technical experts for undertaking the technical analysis of biennial update reports from Parties not included in Annex I to the Convention". Annex to decision 20/CP.19. Available at <http://unfccc.int/resource/docs/2013/cop19/eng/10a02.pdf#page=12>.

"Modalities and guidelines for international consultation and analysis". Annex IV to decision 2/CP.17. Available at <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>.

"UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention". Annex III to decision 2/CP.17. Available at <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>.

"Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention". Annex to decision 17/CP.8. Available at <http://unfccc.int/resource/docs/cop8/07a02.pdf#page=2>.

First biennial update report of Namibia. Available at <http://unfccc.int/8722.php>.

Second national communication of Namibia. Available at <http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php>.